

Plasmavision™ PDS4201U/E/A-H PDS4203W/E-H PDS4204W/E-H

SERVICE MANUAL

FUJITSU GENERAL Proprietary

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FUJITSU GENERAL LIMITED

IMPORTANT INFORMATION

WARNING: TO REDUCE THE RISK OF FIRE AND ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

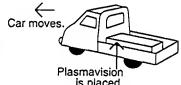
Please use screen saver to prevent after-image of screen.

Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. But IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD. In order not to defeat the safeguards incorporated into this product, observe the following basic rules for its installation, use and service. Please read these "Important Safeguards" carefully before use.

- All the safety and operating instructions should be read before the product is operated.
- The safety and operating instructions should be retained for future reference.
- All warnings on the product and in the operating instructions should be adhered to.
- All operating instructions should be followed.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use attachments not recommended by the product manufacturer as they may be hazardous.
- Do not use this product near water. Do not use immediately after moving from a low temperature to high temperature, as this causes condensation, which may result in fire, electric shock, or other hazards.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. The product should be mounted according to the manufacturer's instructions, and should use a mount recommended by the manufacturer.
- When the product is used on a cart, care should be taken to avoid quick stops, excessive force, and uneven surfaces which may cause the product and cart to overturn, damaging equipment or causing possible injury to the operator.

When carried by car, the unit should be placed as shown in the figure.





- Slots and openings in the cabinet are provided for ventilation. These ensure reliable operation of the product and protect in from overheating. These openings must not be blocked or covered. (The openings should never be blocked by placing the product on bed, sofa, rug, or similar surface. It should not be placed in a built in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.) For proper ventilation, separate the product from other equipment, which may prevent ventilation and keep distance more than 10cm.
- This product should be operated only with the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.
- This product is equipped with a three-wire plug. This plug will fit only into a grounded power outlet. If you are unable to insert the plug into the outlet, contact your electrician to install the proper outlet. If you are unable to insert the plug into the outlet, contact your electrician to install the proper outlet. Do not defeat the safety purpose of the grounded plug.
- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at doors, plugs, receptacles, and the point where they exit from the product.
- For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power line surges.
- Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.
- Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

SPECIFICATIONS

100-240V, 50/60Hz Power Source Package Dimensions Width: 115.4cm(46.7inch) Consumption 3.5 A Height: 74.0cm (29.1inch) Depth: 41.5cm (16.3inch) Display Panel Screen size 92. 0(W) x51. 8(H) [cm] Gross Weight PDS4201: 39.5Kg (87.01bs.) 36.2(W) x20.4(H) [inch] PDS4203: 38.5Kg(83.71bs.) 16:9 852(H) x 480(V) pixels Aspect ratio PDS4204: 39.5Kg (87.01bs.) Number of pixels Pixel pitch 1.08mm x 1.08mm Environment (Operating) -More than $200cd/m^2$ (typ.) Luminance Temperature 0 to 40 ℃ 4201 : 53 : 1 (typ.) 4203/4: 250 : 1 (typ.) Relative humidity 20 TO 90% Contrast ratio 800 to 1, 114 hPa Pressure Max. 160 degrees Viewing angle Accessories User's Manual Input Terminals Remote controller Video input BNC connector Dry batteries (Type AA 2pcs.) 1. $0V_{P-P}$ /75 Ω Power cord PDS4203W/4W \times 3 S video input S terminal PDS4203E/4E ×1 Y signal: 1. OV_{P-P} /75 Ω Cable clamp (2pcs.) C signal: 0. $286V_{P-P}$ /75 Ω Bracket (2types) Screw(2types) PSD4203/4 Three BNC terminal Component $Y : 1V_{P-P}/75\Omega$ video input PDS4204 $P_b/B-Y: 0.7V_{P-P}/75\Omega$ Floppy disk for installing $P_b/R-Y: 0.7V_{P-P}/75\Omega$ pc card (3pcs) Operating guide mD-sub:15pin(3 row type) Analog RGB input Video $0.7V_{P-P}/75\Omega$ SYNC signal:TTL level Option . or $0.3V_{p-p}/75\Omega$ Desktop stand P-42TT01-H 4201 : 5 memories User set mode 4203/4: 7 memories Wall mounting unit (Horizontal) For 0° installation angle Display frequency horizontal P-42WB01-B 4201 : 15.63~37.90 KHz For 5° installation angle P-42WB02-B 4203/4: 15.63~60.00 KHz Vertical: 50.0~75.0 Hz For 10° installation angle Dot clock: 36.0 MHz Max P-42WB03-B For 15° installation angle P-42WB04-B Audio input Two pin tenminals (one system) $500 \text{mVrms}/22 \text{k}\Omega$ Wall mounting unit(Vertical) For 0° installation angle RS-2320 D-sub 9pin terminal P-42WB50-B Color system 4201 : NTSC/PAL/SECAM/4. 43NTSC Ceiling mounting unit 4203/4: NTSC/PAL/SECAM/N-PAL (installation angle variable $0\sim15^{\circ}$) /M-PAL/4. 43NTSC P-42CT01-B Display colors 16.7million(256 each for R. G. B) Graphic board P-42GA04 The wide output graphics board "P-42GA04" for 42 inch PDP is needed to output $852 \times$ Audio Output power 2W+2W(R/L)Speaker Internal speakers 480 square pixcel wide images from a PC. Dimensions Width: 103.5cm(46.7inch)

Height: 64.0cm (25.2inch) Depth: 15.0cm (5.9inch)

Analog RGB input mode

Model: PDS4201U/E/A

Mode number	Display dots×lines	Horizontal frequency	Vertical frequency	Supported signal
1	852 × 480	31.722 kHz	59.966 Hz	When dedicated graphics board used
2	640 × 480	31.469 kHz	59.940 Hz	VGA
3	640 × 480	37.861 kHz	72.809 Hz	VGA 72Hz
4	640 × 480	37.500 kHz	75.000 Hz	VGA 75Hz
5	720 × 400	31.468 kHz	70.09 Hz	VGA 400 lines
6	640 × 480	35.00 kHz	66.67 Hz	MAC 13RGB(1)
0	640 × 480	34.975 kHz	66.62 Hz	MAC 13RGB(2)
7	640 × 240	15.73 kHz	60.06 Hz	15 kHz
8	640 × 400	24.83 kHz	56.40 Hz	24 kHz
9	640 × 400	31.50 kHz	70.15 Hz	31 kHz
10~16		15.7 to 37.90 kHz	50.00 to 75.00 Hz	User settings

Model: PDS4203W/E, PDS4204W/E

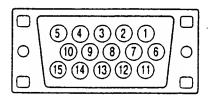
Mode number	Display (dots × lines)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Supported signal
1	852 × 480	31.72	59.97	-Note1 When dedicated graphics board used
2	640 × 480	31.47	59.94	VGA
3	640 × 480	37.86	72.81	VGA 72 Hz
4	640 × 480	37.50	75.00	VGA 75 Hz
5	720 × 400	31.47	70.09	VGA 400 lines
6	640 × 480	34.97	66.61	MAC 13RGB (1)
O	640 × 480	35.00	66.67	MAC 13RGB (2)
7	640 × 400	24.83	56.42	PC98 24kHz
8	640 × 400	31.50	70.15	PC98 31kHz
9	800 × 600	35.16	56.25	SVGA 56 Hz Note2
10	640 × 480	15.73	59.94	60 fields
11	640 × 480	15.63	50.00	50 fields
12				
13				
14		15.63 to 60.00	50.00 to 75.00	User settings
15				
16				

Note 1: The dedicated graphics board is an optional product.

^{2:} The 800 x 600 mode is compressed display through compression interpolation. Also, the screen display is also compressed for display.

RGB input terminal (Display is RGB INPUT.)

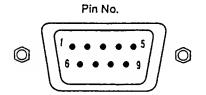
Connects to a personal computer RGB output terminal.



Pin connection	Input signal	Pin connection	Input signal
1	Red	9	
2	Green	10	Ground
3	Blue	11	
4		12	
5	Ground	13	Horiz. sync
6	Ground	14	Vert. sync
7	Ground	15	
8	Ground	Outer side	Ground

RS-232C input terminal (Display is RS-232C.)

Connects to a personal computer RS-232C terminal.

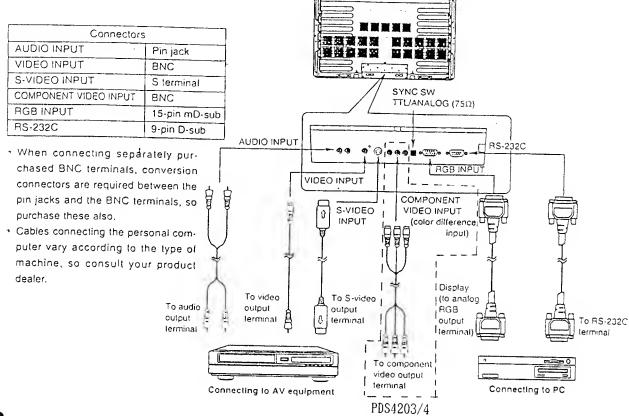


Pin No.	No. Signal	Pin No.	No. Signal
1	DCD(Data Carrier Detect)	6	DSR(Data Set Ready)
2	RD(Receive Data)	7	RTS(Request To Send)
3	TD(Transmit Data)	8	CTS(Clear To Send)
4	DTR(Data Terminal Ready)	9	RI(Ring Indication)
5	GND(Ground)		

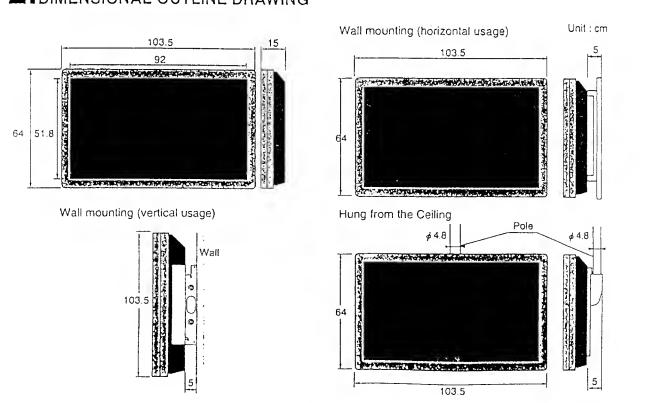
CONNECTION AND DIMENSIONS

1 CONNECTING TO EXTERNAL EQUIPMENT

Cables for connecting external equipment must be purchased separately.

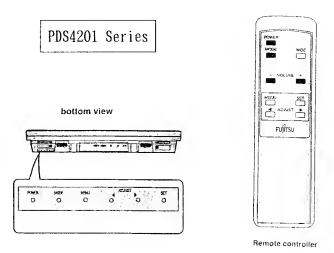


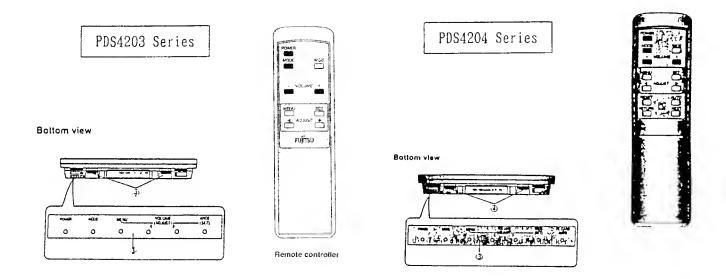
2. DIMENSIONAL OUTLINE DRAWING



OPERATION AND ADJUSTMENT

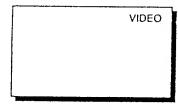
Operation and adjustment button.





1. Mode

* Select the video mode with MODE button.

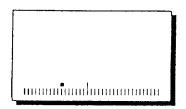


Example: Video mode

The selected mode will be displayed.

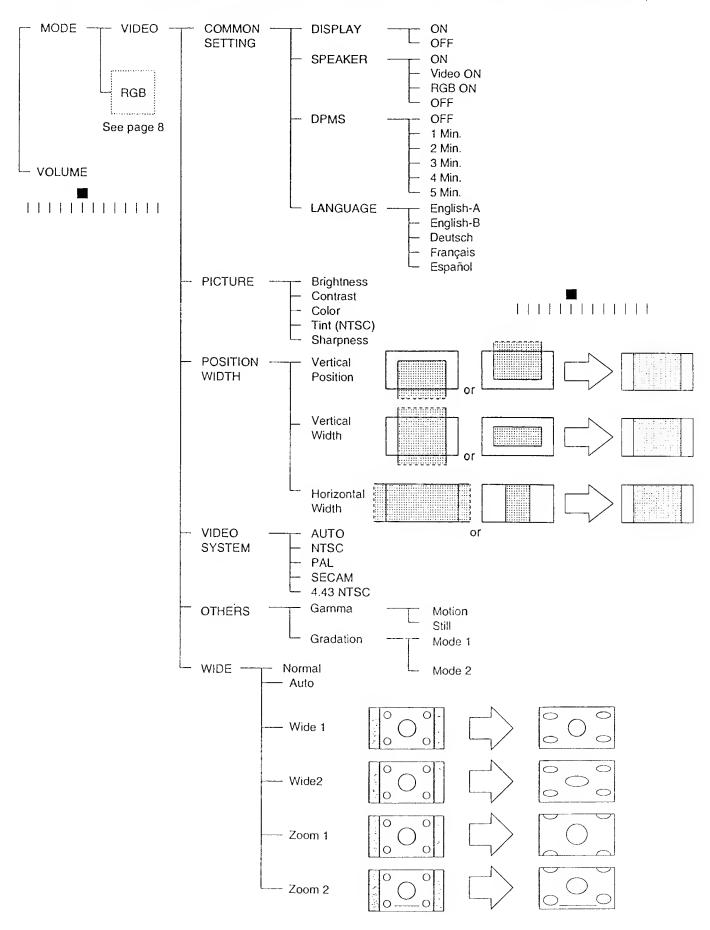
2. Adjusting the volume

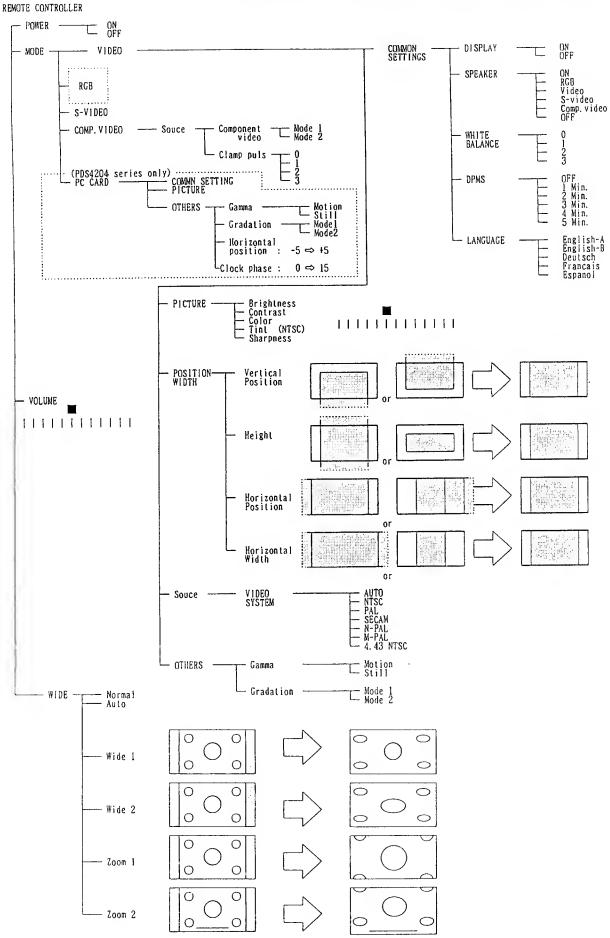
* Push the + or - button of volume



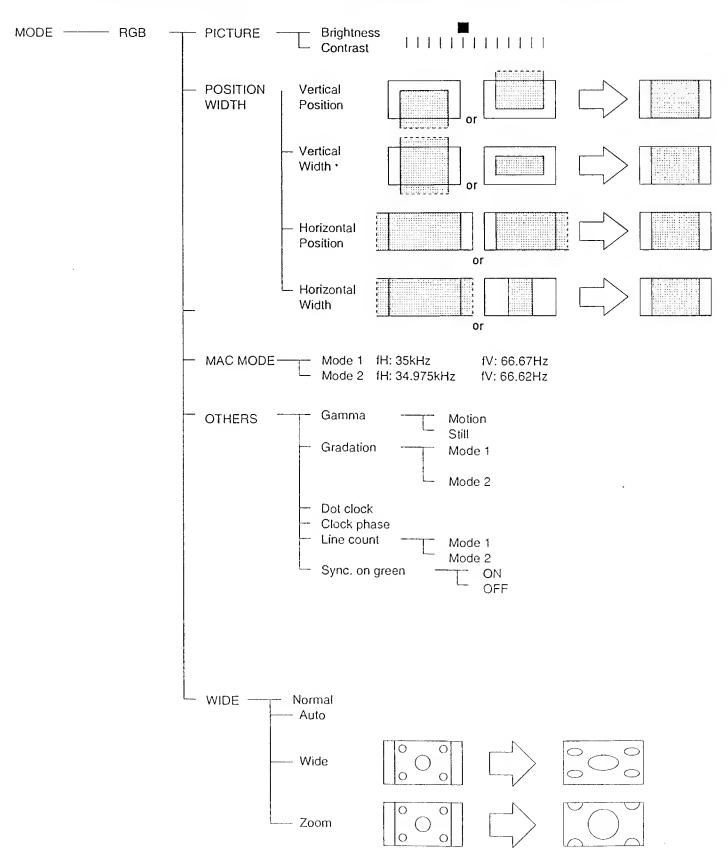
The sound level will be displayed.

3. Video Mode Adjustment Items (Remote controller) $_{(PDS4201\ Series)}$



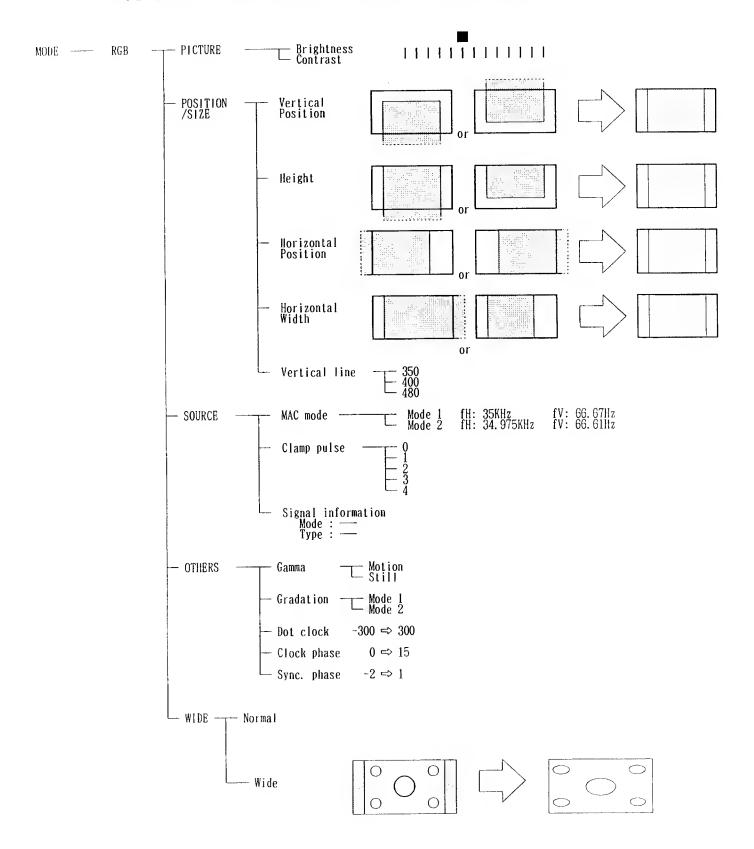


4. RGB Mode Adjustment Items (Remote controller) (PDS4201 Series)



^{*} The operating procedure of the Remote controller is given in User's Manual that came with the product.

RGB MODE ADJUSTMENT ITEMS (PDS4203/4 Series)



^{*} The operating procedure of the Remote controller is given in User's Manual that came with the product.

FAILURE ISOLATION BY LED AND OSD

1. Display

(1) OSD

Two kind of error message are displayed on the screen, and power supply off after 10 sec.

(2) LED

LED error display continuous after power supply is off.

2. Error types and check points

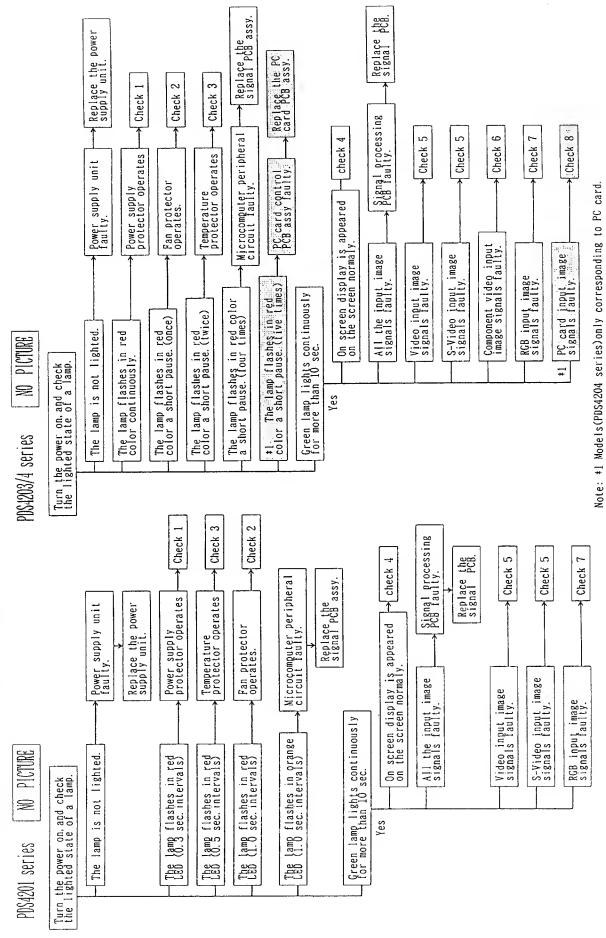
(1) OSD

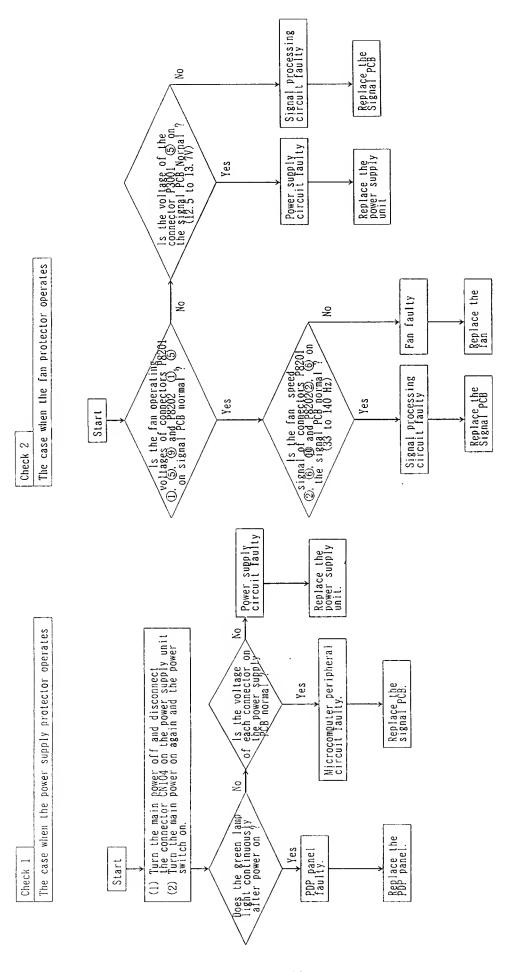
On screen display	Cause	Check point
ERROR MESSAGE CONDITION 1	Fan protector operate	• Fan • Signal PCB
ERROR MESSAGE CONDITION 2	Temperature protector operates	 Ambient temperature of unit Signal PCB

(2) LED

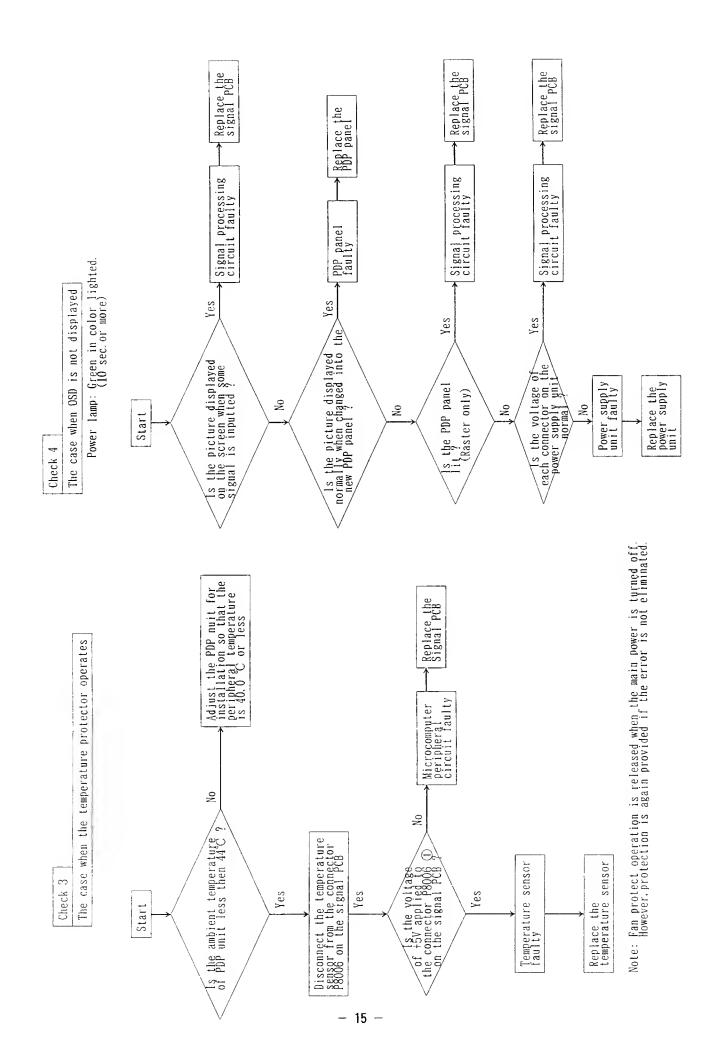
LED lamp display status	Cause	Check point
light continuous (Red)	Stand-by status	
PDS4201 seriese Flashes on 0.3 and 0.3 off sec. (Red) PDS4203/4 seriese Flashes continuous (Red)	No power Power supply protector operates	• Power supply unit • Signal PCB
PDS4201 seriese Flashes on 1.0 and 1.0 off sec. (Red) PDS4203/4 seriese Flashes once in 1 sec. (Red)	Fan protector operates	• Fan • Signal PCB
PDS4201 seriese Flashes on 0.5 and 0.5 off sec. (Red) PDS4203/4 seriese Flashes twice in 1 sec. (Red)	Temperature protector operates	Ambient temperature of unitSignal PCB
PDS4201 seriese Flashes on 0.5 and 0.5 off sec. (Orange) PDS4203/4 seriese Flashes four times in 1.5 sec. (Red)	Microcomputer periphe- ral circuit fault	•Signal PCB

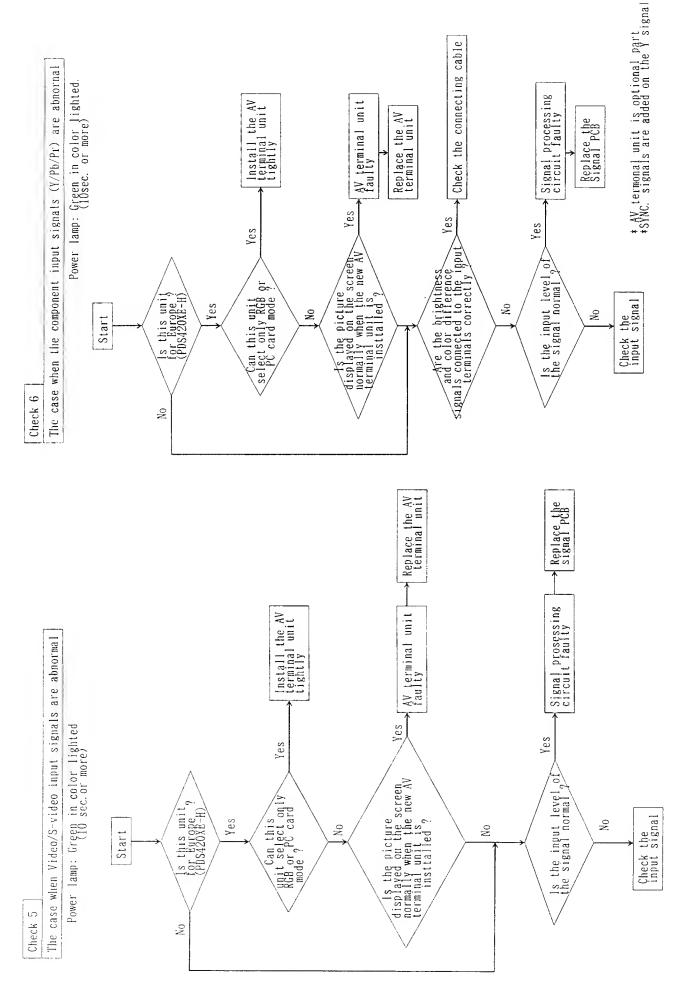
FAILURE ISOLATION FLOW CHART

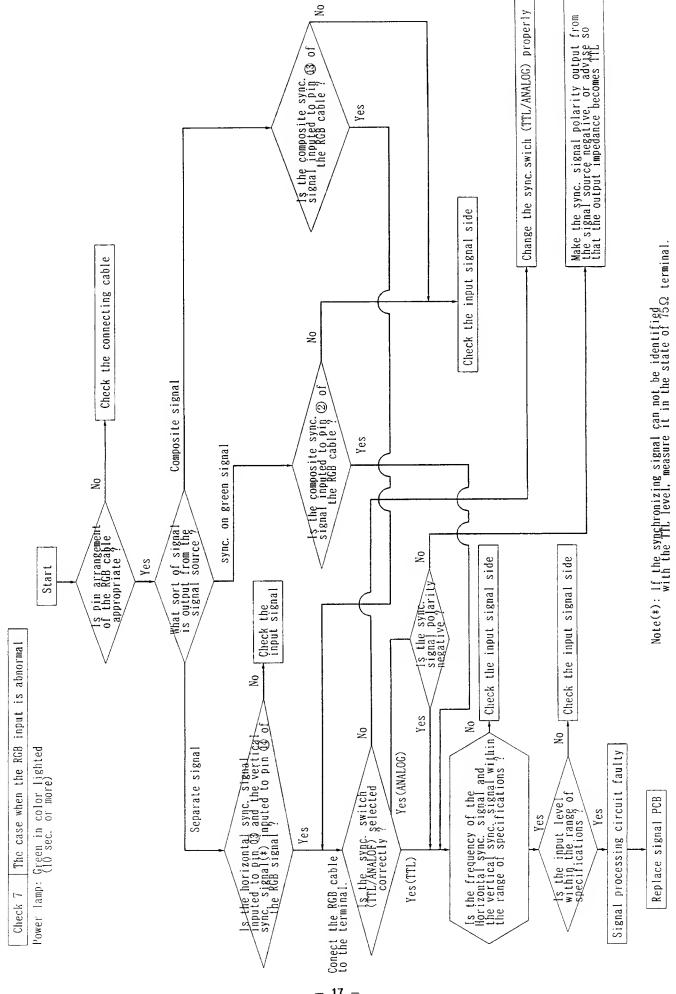




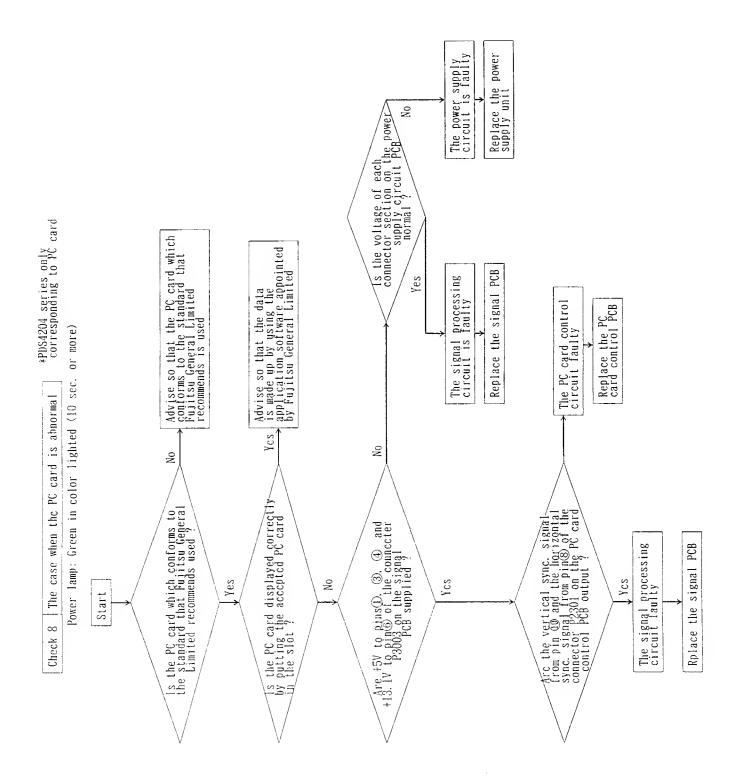
Note: Fan protect operation is released when the main power is turned off. However, protection is again provided if the error is not eliminated.







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VOLTAGE OF EACH CONNECTOR

OThe voltage measurement when protect mode

Because the relay signal is "L" in the state of protect mode, the voltage of Vcc1-4, Vs, Va is not output. Protect mode is cancelled only when the power SW is turned off. So, When the voltage is measured, turn off the power SW, then turn on by remote contorol. Measure the voltage until protecting operates again.

ORelay signal

Only when the relay signal of "CN106 -3" is "H", the voltage of Vcc1-4. Vs and Va are output. When the microcomputer detects the abnormality of the voltage, these voltages are not output.

OACOM signal

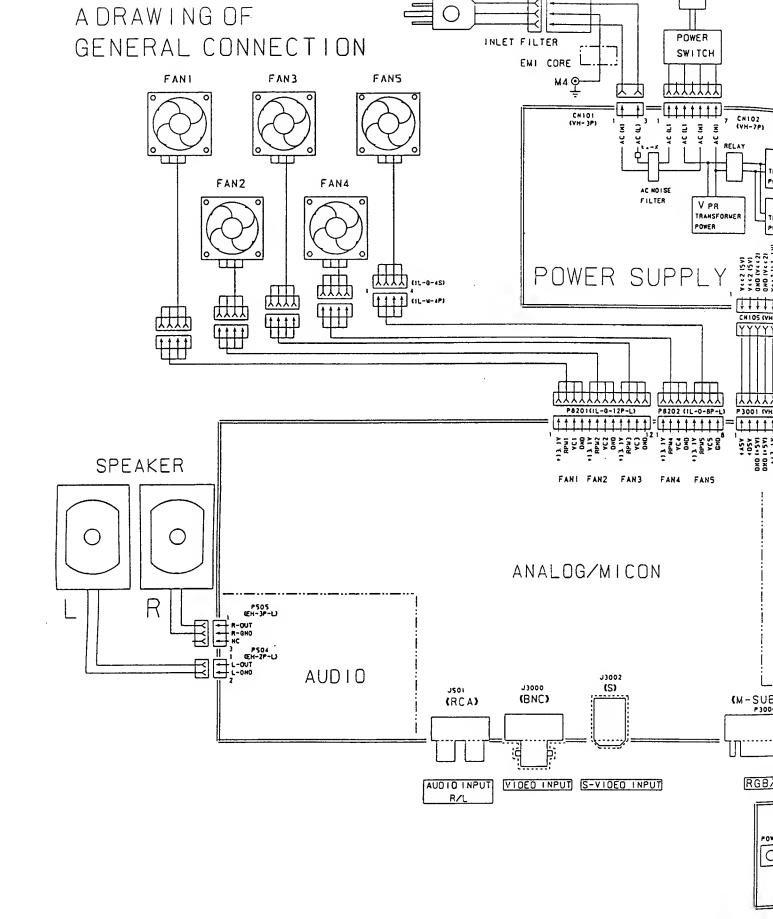
The ACON signal indicates whether AC is supplied or not. The relay signal is output when this ACON signal is "H".

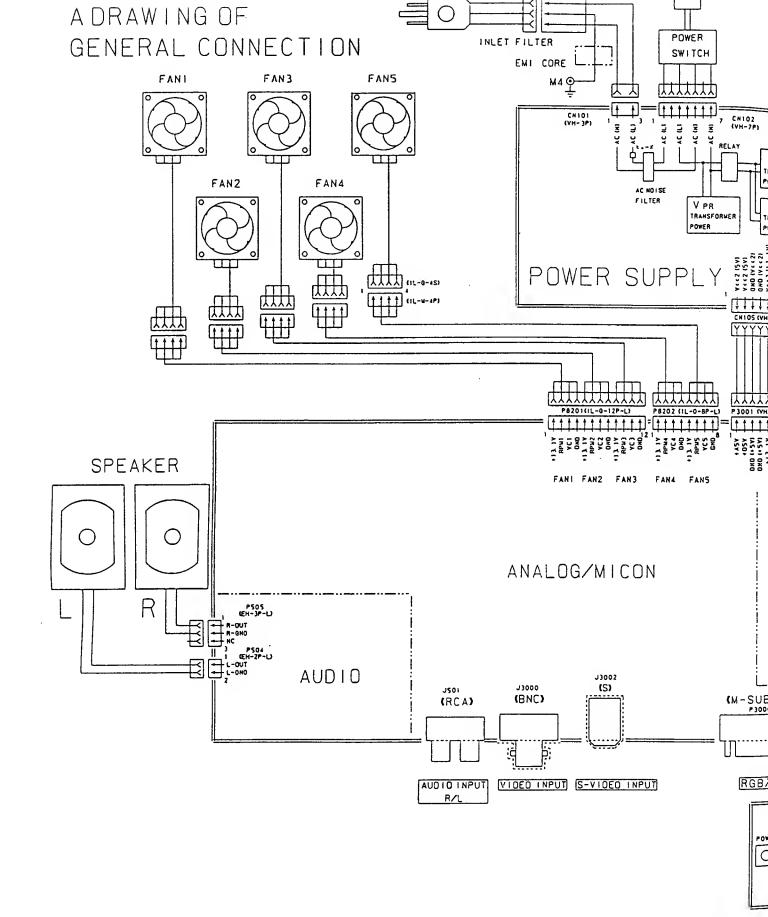
CN1 03	CN1 03 POWER SUPPLY~PDP UNI	
No.	NAME	SPEC.
1	Vcc1	5V(4. 75V~5. 25V)
2	Vcc1	5V(4. 75V~5. 25)
3	GND(Vcc1)	
4	Vrs	0V~2.0V(from PDP unit)
5	GND(Vrs)	
6	Vra	0V~2.0V(from PDP unit)
7	GND(Vra)	
8	Vrr	not used
9	NC	_

CN104		POWER SUPPLY ~PDP UNIT
No.	NAME	SPEC.
1	GND(Vs)	
2	NC	_
3	Vs ·	165, 0V~185, 0V
4	Vs	Vs=165+10×Vrs
5	Vs	VS-100TTU X VTS
6	NC	_
7	Va .	55. 0V ~65. 0V(Va=55+5 ×Vra)
8	NC	_
9	GND(Vs)	
1 0	GND(Vs)	

CN105	5/P3001	POWER SUPPLY~SIGNAL PCB
No.	NAME	SPEC.
1	Vcc2	5V(4. 75V~5. 25V)
2	Vcc4	5V(4. 75V~5. 25V)
3	GND(Vcc2, 4)	
4	GND(Vcc2, 4)	
5	Vcc3	13. 1V(12. 5V ~13. 8V)
6	GND(Vcc3)	

CN106/P3002		POWER SUPPLY~SIGNAL PCB
No.	NAME	SPEC.
1	VPR(P+5V)	P+5V(4. 75V~5. 25V)
2	GND(VPR)	
3	RELAY	Power on="H", off="L"
4	NC	
5	ACON	AC power on="H", off="L"





CAUTIONS FOR INSTALLATION

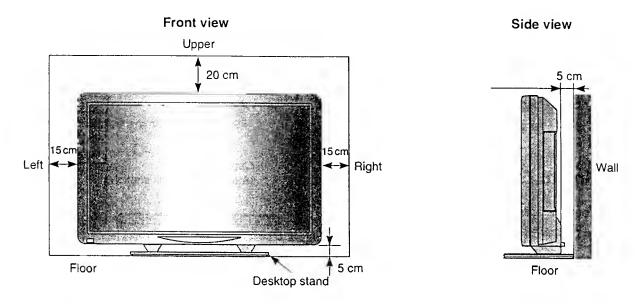
1.Installation Environment

- 1) Do not expose the display directly to vapor or heat. Protect the unit from rain or water.
- 2) The display uses glass material, and it cracks easily. So, do not apply any vibration and shock to this display. When carrying the display, always do by two peoples so that the vibration and shock is not applied to the display.
- 3) Do not disturb the radiate of heat from the rear, side and top of the unit. Install the unit in the place where is well ventilated. Use the unit within an ambient temperature range of 0°C-40°C.
- 4) Displaying the static picture continuously for a long time may cause after-image as well as CRT. To keep unit life for prolonged length of time, take measures such as the display to turn off at an unnecessary time, scroll of the picture and application of screen saver. Display periodically so that the whole screen becomes uniform with brightness inversion, to additive complimentary colors and insertion of moving pictures. Use a half tone and an intermediate color, if possible, as the higher brightness becomes the easier the burning occurs. Further, there is not worried about moving pictures.
- 5) Do not expose the optical filter directly to the sun for a long time. If so, the characteristic of the optical filter is changed, and there is some fear of discoloration.
- 6) Do not wipe the optical filter with a solvent such as benzine, and thinner. If so, the optical filter may peel off. Wipe the surface of the optical filter with a fluffy-less and soft cloth (e. g. cotton flannel). The surface of the optical filter is easily to be scratched, so do not rub or hit it with a hard thing.
- 7) The display is want of brightness and contrast compared with a CRT yet. In addition, as the screen becomes whitish by effect of the peripheral environmental light and it is difficult to see the screen, great care should be taken for the effect of the outdoor light. Therefore, it is recommended to darken the peripheral environmental light slightly.
- 8) Take care that the light from the back may have an effect on the screen. So, avoid the light from the back where possible.
- 9) The display may cause radio wave interference to sensors which detect faint and low frequency radio wave. When the VTR and signal cable shielded incompletely is brought close to the display, it may catch noise. To avoid catching noise, change the location or move it away for measures.
- 10) Near infrared rays come from the front of the display panel. As a result, an infrared ray remote control unit of other equipment and infrared communication system may be caused interference. At a time like this, change the directions of the equipment against the screen, move further away so that the direct rays (or reflected rays depending on the situation) from the screen have no effect on the other equipment.
- 11) When the display is installed in a quiet room, it is recommended a thick curtain to be arranged on the wall of the rear side to reduce the noise of funs.

3. Space required around a plasma monitor

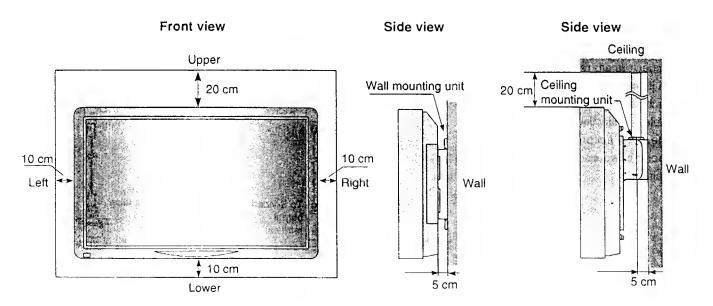
* For good heat dissipation, this monitor requires space shown in the figure below.

When desktop stand used



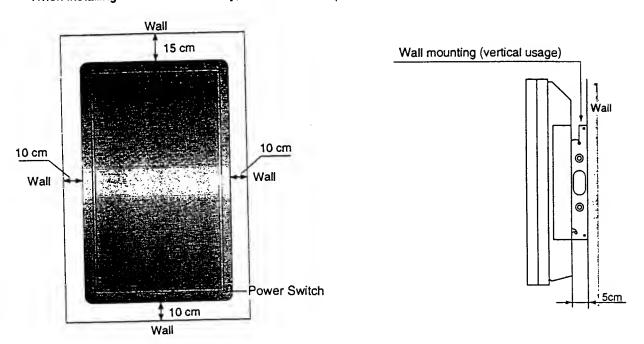
When wall - mounting unit used (horizontally)

When ceiling - mounting unit used



When wall - mounting unit used

* When installing the monitor vertically, install it with the power switch downward.

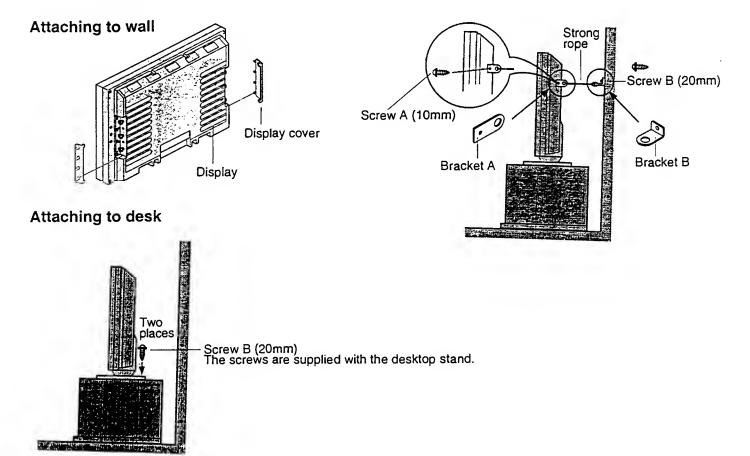


4. Desktop stand

Model P-42TT01

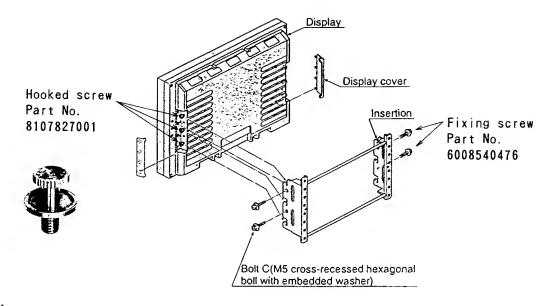
* This machine could topple over if children climb up on it or push it.

To prevent accidents and to ensure safety during disasters such as earthquakes, take precautions to ensure that the equipment cannot topple over.



Model P-42WB01 P-42WB02 P-42WB03 P-42WB04

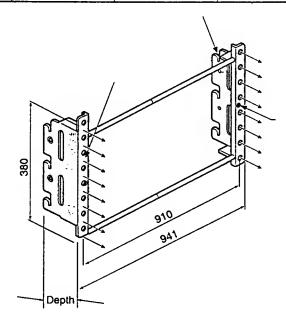
1) Assembling



2) Model

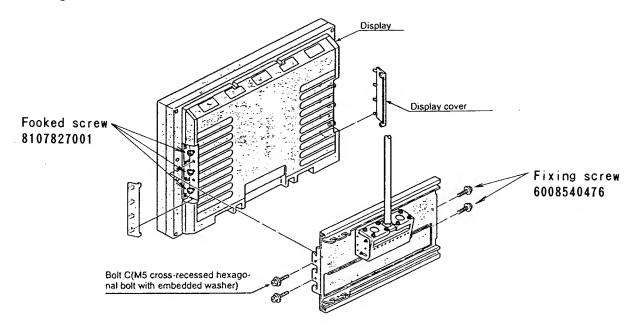
(Unit:mm)

Nindal		Outer dimensions		
Model	Depth	Height	Width	Weight
P-42WB01	100.0			1.5kg
P-42WB02	116.5	380	941	
P-42WB03	152.5			
P-42WB04	188.0			

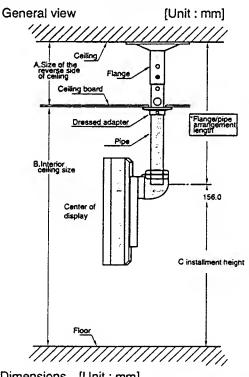


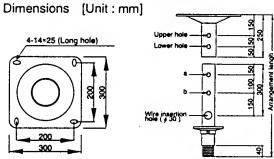
6. Ceiling Mounting Unit

1) Assembling



2) Option parts (pipe set)





Selection of pipe length (X)

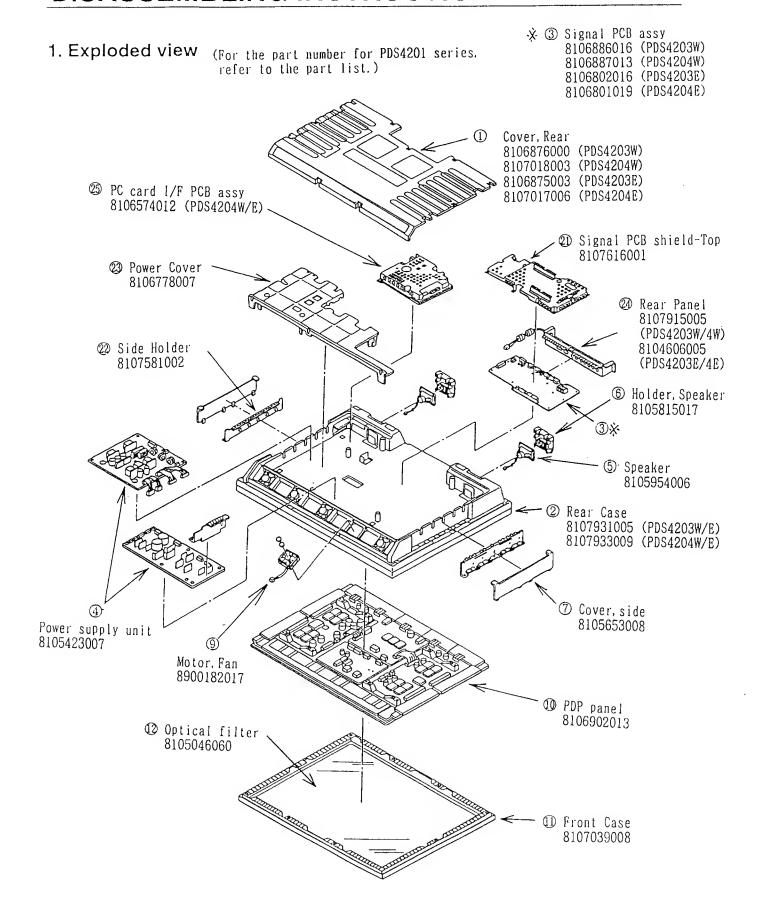
[Unit:mm]

Set	Pipe Length : (X)		Combine	Combined length	
Name			Upper hole of flange	Lower hole of flange	
S	400	a b	400 500	450 550	
А	600	a b	600 700	650 750	
В	800	a b	800 900	850 950	
С	1000	a b	1,000 1,100	1,050 1,150	
D	1200	a b	1,200 1,300	1,250 1,350	
Е	1400	a b	1,400 1,500	1,450 1,550	

Parts included in sets A to E and S [Unit: mm]

Part Name	Q'ty	Part Name
Hanger pipe	1	Black
Hanger flange	1	Black
M48 nut	2	Black
Ornamental adapter	1	Black
Split Pin	1	Unpainted

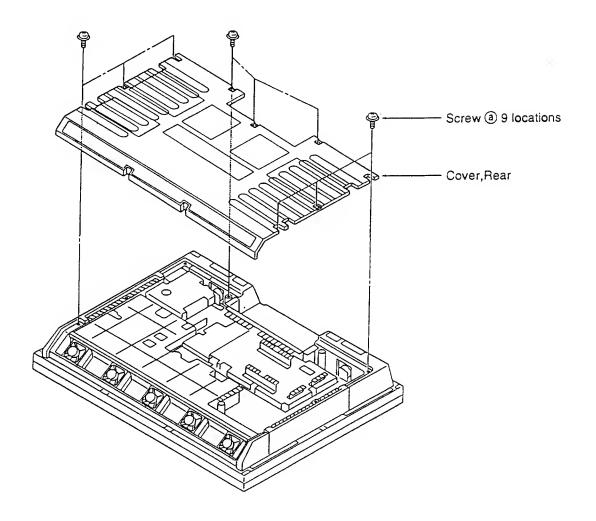
DISASSEMBLING INSTRUCTION



2. Removing the Main Components

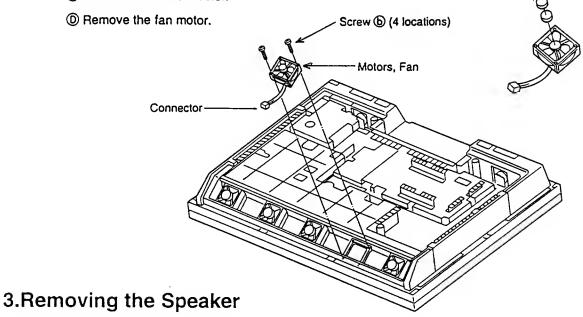
2.1 Removing the Rear Cover

- A Remove screws a at nine locations.
- B Remove the rear cover.

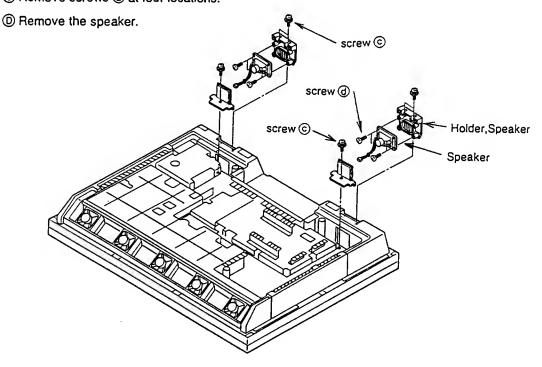


2.2 Removing the Fan Motors

- * Same procedure for all five motors.
- (A) Remove the rear cover (removing instruction on a separate page).
- ® Remove screws ® at four locations (per motor).
- © Disconnect the connector.

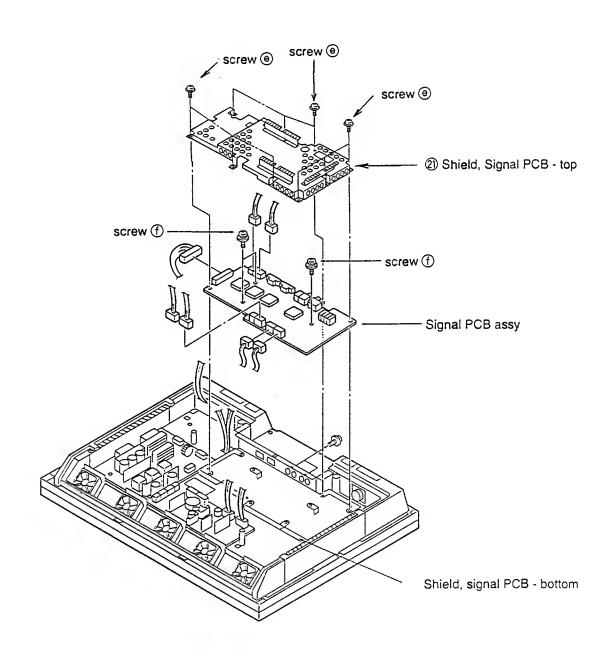


- A Remove the rear cover (removing instruction on a separate page).
- ® Remove screws © at four locations.
- © Remove screws @ at four locations.



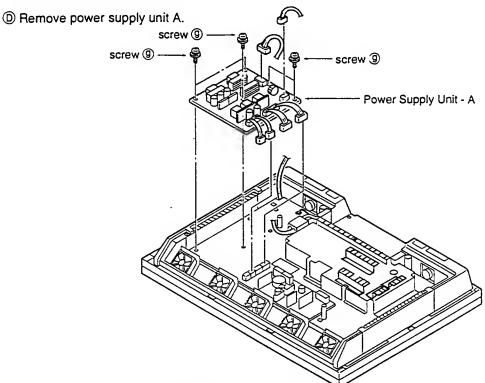
4. Removing the Signal PCB Assembly (M6JC)

- A Remove the rear cover (removing instruction on a separate page).
- ® Remove screws @ at eight locations.
- © Remove the signal PCB top shield.
- ① Remove screws ① at three locations.
- **(E)** Disconnect the seven connectors.
- F Remove the signal PCB assembly.



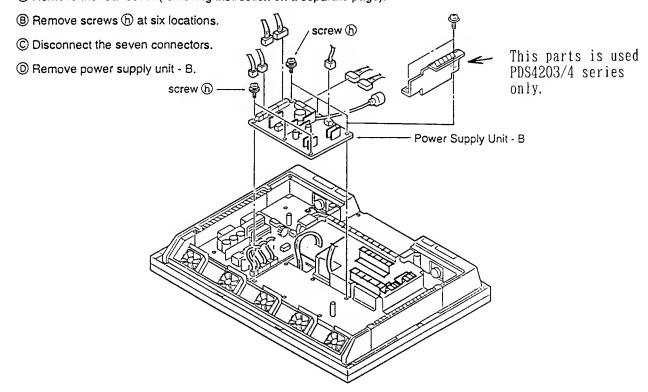
5. Removing the Power Supply Unit - A

- A Remove the rear cover (removing instruction on a separate page).
- B Remove screws 9 at five locations.
- © Disconnect the six connectors.

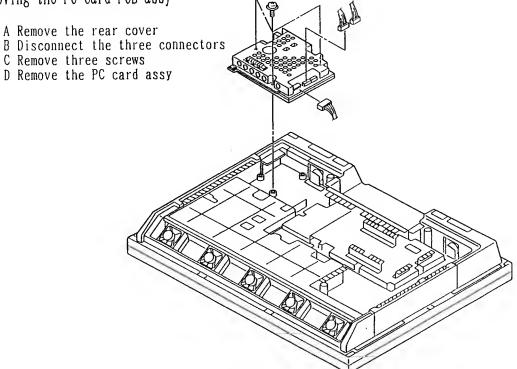


6. Removing the Power Supply Unit - B

A Remove the rear cover (removing instruction on a separate page).



7 Removing the PC card PCB assy

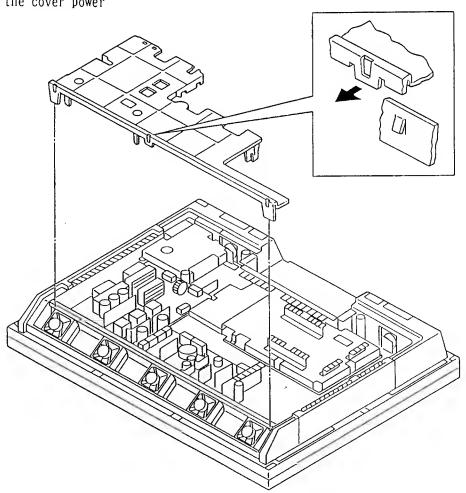


*PDS4204 series only

8 Removing the cover power

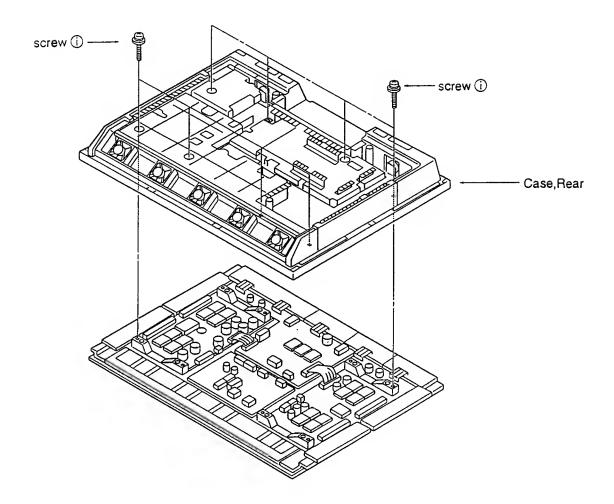
A Remove the rear cover B Remove three hooks C Remove the cover power

*PDS4203/4 series only



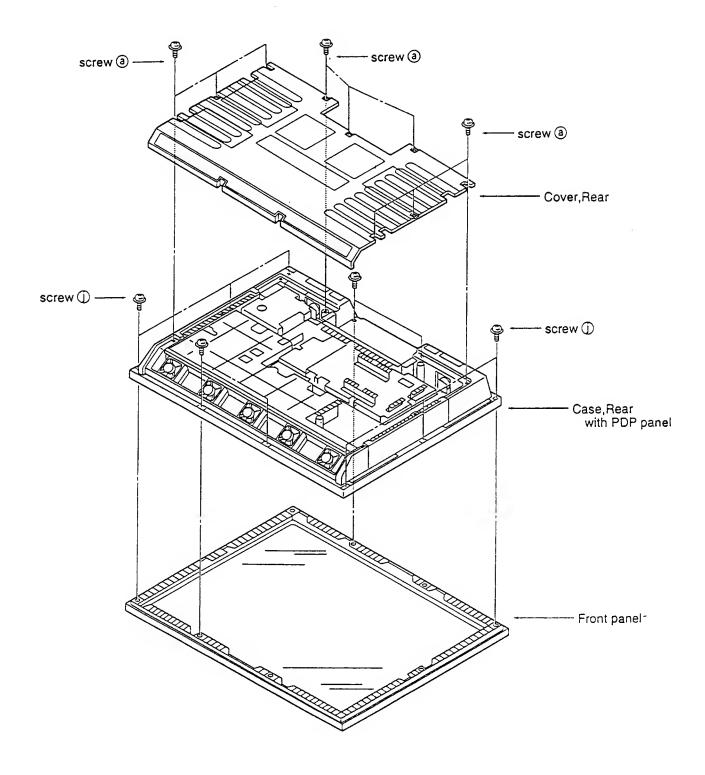
9. Removing the Case, Rear

- A Remove the rear cover (removing instruction on a separate page).
- ® Remove screws (i) at eight locations.
- © Remove the rear case.



10. Removing the Front Panel

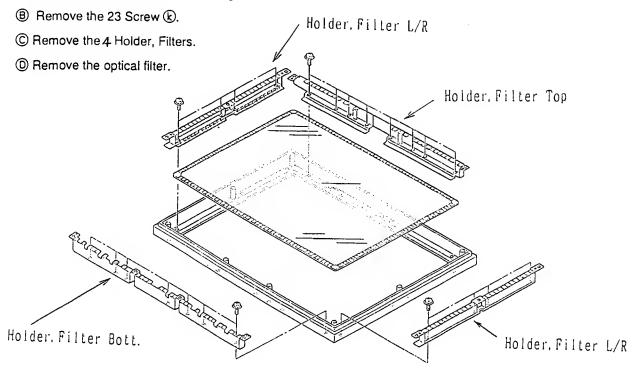
- A Remove screws a at nine locations.
- B Remove the rear cover.
- © Remove screws ① at ten locations.
- Remove the rear case.



11. Removing the Optical Filter

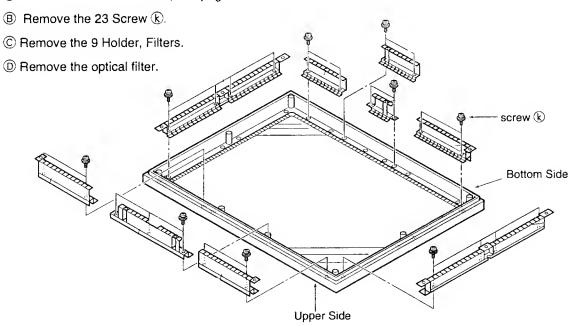
11.1 PDS4203/4 series only

A To remove the Front Panel, see page 41.



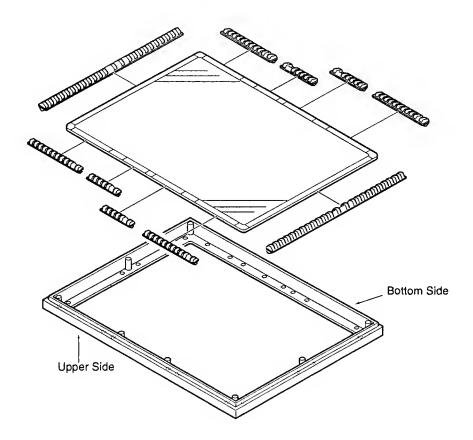
11.2 PDS4201 series only

A To remove the Front Panel, see page 41.



12. Operating the Optical Filter

*To replace the Optical Filter, remove the 10 Contact Springs from the failed Optical Filter and attach them to the new Optical Filter.



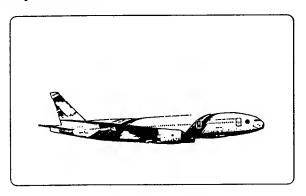
Part list

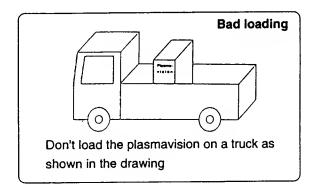
Ref. No.	Description	PDS4201 series	PDS4203W-H	PDS4203E-H	PDS4204W-H	PDS4204E-H
1)	Rear Cover PDS4201U-F Cover mesh		8106876000	8106875003	8107018003	8107017006
	Change PDS4201E-F together Cover mesh	ı				
	mesh 2pcs. PDS4201A-F	· ·		<u> </u>		
2	Rear Case Key-SW H Change Shield F together with key-SW holder and shield frame.		8107931005	Û	8107933009	- - -
3	Signal PCB assy		8106886016 With video	8106802016 No video	8106887013 With-video & PC card	8106801019 No video W PC card
	PDS4201U-H	8105753005				
	PDS4201E-H, PDS4201A-H	8105756006			_ 	
4	Power Supply Unit (PFW-421)	8105423007		ŷ	.	♦
(5)	Speaker	8105954006	♦	Û	.	₽
6	Speaker Holder	8105815017	0	ŷ	Û	.
7	Side Cover	8105653008	₽	÷.	Û	Ų.
9	Fan Motor	8900131015	8900182017		₽	ŷ
10	PDP Panel FPF42C10660UD-01		8106902013	ᡧ	Ų.	Ų.
	FPF42C10660UC-01	8106902013				
11)	Front Case	8107039008	8107039008	♦	•	Ð.
12	Optical Filter	8105046060	₽	♦	.	Û
21)	Signal PCB Shield-Top	8105625005	8107616001	⇔	₽	
22	Side Holder	8107581002	\(\bar{\pi} \)		♦	Ų.
23	Power Cover	8105870009	8106778007	\	⇔	₽

Ref. No.	Description	PDS4201 series	PDS4203W-H	PDS4203E-H	PDS4204W-H	PDS4204E-H
24)	Rear Panel	8107048000	8107915005	810 4606005	8107915005	8104606005
25	PC card I/F PCB assy				8106574012	⇔
	Power Cord VDE	8105866002		⇔	⇔	←
	UL/CSA	8105865005	⇔		8105865005	
	SAA	8106228007	♦		8106228007	
	Remote Control Unit	8105451017	♦	\$	8106508000	
54	Carton box *Top		8107896007	8107897004	8107899008	8107900001
	PDS4201U-H	8105824040				
	PDS4201E-H	8105824033				
	PDS4201A-H	8105824057				
53	Carton box *Bottom	8106739008		⇔	⇔	
55	In-sheet	8106740004	⇔	₩.	⇔	
50	Pad top (2 pcs)	8107040004	⇔	⇔	⇔	
51	Pad bottom (2 pcs)	8107041001	\(\(\)	⇔	⇔	
52	Pad center	8107042008	⇔	⇔	←	
56	Double carton box *Top	8106494006	⇔	⇔	⇔	
60	Double carton box *Bot	8106495003		⇔		
59.	Pad center T&B DOUBLE	8106493009	⇔	⇔	⇔	₹
57	Pad corner top DOUBLE	8106313000	⇔	⇔	⇔	
58	Pad corner bott DOUBLE	8106220001	←	⇔	⇔	\(\(\)

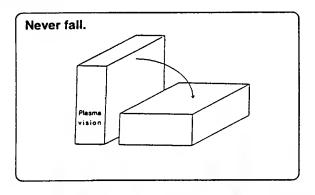
PROHIBITED MATTERS ON TRANSPORTATION AND HANDLING

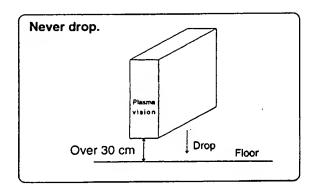
Transportation

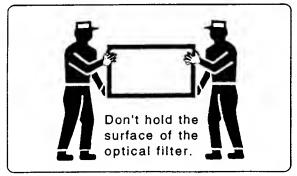


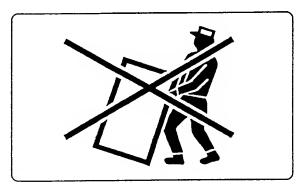


Handling





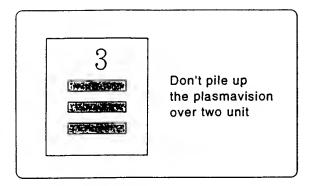


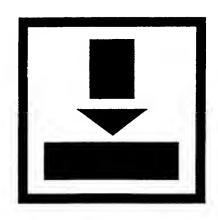












Good sample on transportaion and handling

